Letters to the Journal

Letters are welcomed and will be published as space permits. Like other material submitted for publication, they should be typewritten, double-spaced, should be of reasonable length, and will be subject to the usual editing.

Views expressed in Letters to the Journal are those of the writers concerned and are NOT to be interpreted as the opinions of The Canadian Medical Association or of the editors.

FLUORIDATION OF WATER SUPPLIES

To the Editor:

This is a short communication to the Journal, for the information of your readers, as presented by J. J. Rae, Ph.D., who headed the committee of our Society (The Canadian Society for Scientific Study of Food, Water and Air Contaminants) for an analytical study of Brantford water supplies.

The purpose of the study was our concern over the lack of data from a reliable source, regarding the fluoride content of Brantford water. This drinking water has been artificially fluoridated, for over ten years, ostensibly to reduce caries in children's teeth. We therefore obtained samples of Brantford water and had it analyzed, and found that the fluoride concentration is much below the value recommended by the experimenters in the fluoridation field of the United States.

Samples of the Brantford water were taken from different sources on the same day, in widely scattered districts. The analyses were made by an independent consulting laboratory, and showed that in every sample the fluoride content was much below the limit set by the United States Public Health Service (1 p.p.m.). The average value obtained was 0.6 p.p.m. of fluoride, whereas the minimum requirement to be effective is supposedly 1 p.p.m.[1]

Our conclusions from these findings are that since the fluoride content of this water is far below the optimum concentration for beneficial effects on teeth, the reported results in the Brantford experiment could be attributed to other factors.

We believe that the Brantford results are due in part to the publicity the experiment has received, which would result in greater attention to oral hygiene. This is substantiated by the fact that Table 11 on page 27 of the 1954 report by the Department of National Health and Welfare, shows that in 1954 the percentage of children examined with good oral hygiene in Brantford was twice that of the children examined in Sarnia, where there is no fluoride (36.8% as compared to 19.2%).

We are surprised that even with this low fluoride concentration, the reported results obtained are analogous to those in U.S. cities where we are led to believe that the fluoride concentration was kept at 1 p.p.m. This makes us feel that much credence can be given to the findings of Sutton[2] which presented many challenges to the veracity of the statistics reported from Brantford, Newburgh, and other fluoridated towns.

Our final conclusion is that we cannot agree, from our findings, that it is an "easy and reliable undertaking to fluoridate a public water supply at 1 p.p.m. fluoride within narrow limits," as the Morden Commission on Fluoridation[1] suggests. It is readily understandable to us why the Royal College of Dental Surgeons of Ontario[3] does not endorse the Morden Report.

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W. A. COSTAIN, M.D. and
G. W. JOHNSON, D.D.S.

REFERENCES

1. Ontario, Committee Appointed to Inquire into and Report upon Fluoridation of Municipal Water Supplies (Morden Committee on Fluoridation of Water Supplies), Report, Toronto, 1961, p. 120.
2. SUTTON, P. R. N.: Fluoridation—Errors and omissions in experimental trials, Melbourne University Press, Melbourne, Australia, 1959.
3. Personal communication from the Royal College of Dental Surgeons to the President of The Canadian Society for Scientific Study of Food, Water & Air Contaminants.

[*Editors' Note: Because of the nature of the contents of the foregoing communication, it was referred to the Medical Officer of Health, Brant County Health Unit, and to the Registrar-Secretary of the Royal College of Dental Surgeons of Ontario, for their comments. Their replies are reproduced herewith.*]

To the Editor:

With reference to the letter to the Journal submitted by J. J. Rae, Ph.D., W. A. Costain, M.D., and G. W. Johnson, D.D.S., who represent "The Canadian Society for Scientific Study of Food, Water & Air Contaminants", I wish to offer several comments.

I forwarded a copy of the above letter to Mr. N. A. Grandfield, P.Eng., General Manager of the Brantford Public Utilities Commission, which body is responsible for the addition of fluorine to the municipal water supply. The following is extracted from his reply:

"In assessing the fluoridation of Brantford city water, it is important to realize that one of the first concepts of water fluoridation set forth by Dr. Trendley Dean of the United States Public Health Service, and imparted to us as a direction by the late Dr. W. L. Hutton, the former Medical Officer of Health for Brantford, was that any water plant conducting fluoridation could quite properly close down the fluoridation operation, for repairs or other reasons, for a period of two weeks per annum without destroying the overall desirable effect.

"It is true that we have had some complete and some partial shutdowns, all as the result of normal wear and repair of machine, construction and adjustment of new plant, material that fed poorly, late delivery of material due to transport and other difficulties, and it is also true that owing to these difficulties, our own analyses have shown that there have been occasions when the city water in Brantford did have a fluoride ion content as low as 0.6 p.p.m., and even lower, including zero.

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"However, our analytical records show that, despite brief shutdowns, the city water in Brantford has, since June 20, 1945, contained fluoride ion to the extent of over 1.00 p.p.m. and below 1.50 p.p.m. for 50 weeks or more of each year. Furthermore, our water plant records of fluoride chemicals purchased and applied to the water as expressed against the gallonage of water pumped fully substantiate the above statement. The records of daily analyses for fluorides in the Brantford city water have been submitted to the Medical Officer of Health of the City of Brantford and these records have also been examined by the Ontario Government's Commission of Enquiry into water fluoridation."

The committee representing "The Canadian Society for the Scientific Study of Food, Water & Air Contaminants" concludes that on the basis of one unspecified day's sampling, tested in an unnamed laboratory, the reported results in the Brantford experiment could be attributed to other factors. To reach such a conclusion as the result of a test on one day out of almost 17 years of fluoridation does not appear to be particularly scientific.

One of the factors mentioned by the committee is oral hygiene, and it is implied that because of publicity in connection with the introduction of fluoridation greater attention was paid to this subject. I have it on good authority that such was not the case. In fact public reaction was the direct opposite, most people feeling that once the water was fluoridated, good oral hygiene was less important.

Brantford has had a school dental service since 1914. Its purpose was the examination of the teeth of all elementary school children, the treatment of selected cases and the classroom teaching of good dental hygiene habits and proper diet.

It is agreed that fluoridation of the water supply is not the only factor in the formation of good teeth and that good oral hygiene and a well-designed diet low in carbohydrates promote good dental health. However, in spite of a long-established, well-developed school dental program in Brantford no special improvement in the dental caries experience was shown until the introduction of fluoridation of the municipal water supply in 1945. The fluorine experiment in Brantford lasted for 10 years following the introduction of fluoridation. Eleven annual surveys, one prior to and 10 following fluoridation, made by the same team of professional men, demonstrated an improvement of over 60% in the dental health of Brantford school children.

The opinion of the committee of "The Canadian Society for Scientific Study of Food, Water & Air Contaminants" that the Brantford figures lack veracity is obviously based on prejudice and surmise. Regardless of their opinion, the fact remains that fluoridation is a safe, simple, cheap and effective way to reduce the incidence of dental caries.

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To the Editor:

The contentions of the representatives of "The Canadian Society for Scientific Study of Food, Water & Air Contaminants" are essentially as follows:

1. The water supply of Brantford is not fluoridated at the one part per million level.

2. The acknowledged improvement in dental health in Brantford accrues from the public's greater attention to oral hygiene.

3. The Royal College of Dental Surgeons of Ontario does not endorse the report of the Ontario Fluoridation Investigating Committee.

To deal with these observations in reverse order:

The Ontario Fluoridation Investigating Committee was created by Order-in-Council. It was, therefore, brought into existence by the Government of Ontario and not by any action of the Royal College of Dental Surgeons of Ontario. The scientific conclusions of the Ontario Fluoridation Investigating Committee were endorsed by the Royal College of Dental Surgeons in company with virtually every major medical, dental and public health organization in Canada and the United States—extending to the World Health Organization as well—long before the report of the Committee was tabled in the House. The statement that the Royal College of Dental Surgeons does not endorse the Report is a transparent device to invite a completely unwarranted inference. The Royal College of Dental Surgeons of Ontario endorses, without qualification, the fluoridation of communal water supplies and in a Brief prepared for submission to the Royal Commission on Health Services has, in company with the Ontario Dental Association, stated that it endorses the conclusions of the report of the Ontario Fluoridation Investigating Committee.

The Royal College of Dental Surgeons of Ontario continues to aver that water fluoridation is the most important single public health measure available to combat dental caries, an increasingly serious and costly health problem. Fluoridation has been scientifically proved to reduce, by approximately two-thirds, the incidence of dental caries in children, and these benefits extend into adult life as well. For more than 25 years there have been hundreds of sound scientific studies which attest to the efficacy and safety of this public health procedure. These studies have been undertaken under the widest variety of controlled conditions. Without question or doubt the adjustment of the fluoride content of a community's water supply to approximately one part fluoride to each one million parts of water is absolutely safe, is beneficial, and is not productive of any undesirable systemic effects in man.

Your correspondents refer to page 27 of the 1954 Report of the Department of National Health and Welfare on the Brantford-Sarnia-Stratford Study. It is regrettable that it was necessary for them to take information out of context in a vain attempt to support an untenable position. While it is true that in 1954 the percentage of children with "good" oral hygiene in Brantford (artificially fluoridated) was 36.8 and in Sarnia (negligible fluoride) was 19.7, the authors neglected to report that the children in Stratford, which has had a fluoride content of approximately 1.3 p.p.m. at least since 1917, had a "good" oral hygiene pattern of 17.8% in 1948, 10.1% in 1951, and 31.1% in 1954. Yet over the entire study period the children in Stratford, because of the presence of adequate amounts of fluoride, enjoyed a greatly reduced prevalence of dental caries.

On the matter of oral hygiene the Department of National Health and Welfare report states that "the figures here suggest that since 1948, difference in oral